

## Title (en)

Screen-printed cylindrical resistors.

## Title (de)

Durch Siebdruck hergestellter zylindrischer Widerstand.

## Title (fr)

Résistance cylindrique sérigraphiée.

## Publication

**EP 0536895 A1 19930414 (EN)**

## Application

**EP 92308115 A 19920908**

## Priority

US 77470691 A 19911009

## Abstract (en)

A thick-film screen-printed elongate cylindrical resistor, comprises: (a) an elongate cylindrical substrate (10) having a diameter in the range of about 1/10 inch (2.5 mm) to about 1/2 inch (12.5 mm), (b) a V-serpentine screen-printed pattern (11) of thickfilm resistive material adherently applied onto said substrate (10) in such orientation that the two rows of apexes (14, 15) of said pattern (11) are generally along lines that are generally parallel to each other and to the axis of said substrate, said rows (14, 15) being spaced apart circumferentially of said pattern (11), to thereby form a space (16) between said rows (14, 15), said pattern (11) having line sections (12, 13) of adjacent lines that are not parallel to each other but instead are at small acute angles to each other, the gaps (16) between said apexes (14, 15) in each of said rows, at the open ends of the V-serpentine loops, and determined in a direction longitudinal to said substrate, being sufficiently large to cause said resistor to have a high voltage and/or power rating, said gaps (G) at said open ends of said loops being substantially larger than are the gaps (g) at the closed ends of said loops, said pattern (11) having end portions (20) that extend to the vicinities of the ends of said substrate (10), (c) cup-shaped metal end caps (22, 23) press-fit on the ends of said substrate (10) and electrically connected, respectively, to said end portions (20), (d) leads (24, 25) connected to said end caps (22, 23), and (e) an environmentally-protective insulating coating provided over said pattern. The apexes (14, 15) of the V-serpentine pattern (11) may each have an outer edge (17), closest to said space (16) between said rows, that is convex and rounded. The ratio of the width of said gaps (G) between apexes of said pattern at the open ends of said loops, to the line width of said pattern (11) at angularly-related sections (12, 13) thereof, may be in the range of 1.2 to 1, to 3 to 1. In a method of making such a resistor the height of the pattern (11) and the diameter of the substrate (10) is chosen to provide the desired low voltage coefficient. <IMAGE>

## IPC 1-7

**H01C 7/00**; **H01C 17/06**

## IPC 8 full level

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## CPC (source: EP US)

**H01C 7/003** (2013.01 - EP US); **H01C 17/065** (2013.01 - EP US); **Y10T 29/49099** (2015.01 - EP US)

## Citation (search report)

- [A] EP 0334473 A2 19890927 - CADDOCK RICHARD E
- [A] US 4697335 A 19871006 - PEDERSEN DAVID [US], et al
- [AD] US 4132971 A 19790102 - CADDOCK JR RICHARD E
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## DOCDB simple family (application)

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